

In re Appln. of: John Mansbridge
Appln. No.: 09/494,053
Attorney docket: 724-X00-003

In the Claims:

Cancel claims 10 to 23 and add new claims 24 to 35

Claims 1-23 (canceled).

24. (new) In a data filtering apparatus for a multiplexing unit wherein a radio frequency signal is input to a device that converts said radio frequency signal to a plurality of data signals correlated with the frequencies of the radio frequency signal, and that are detected by a photodiode array, the detected plurality of data signals are output from the photodiode array on a path that inputs the signals to the multiplexing unit for processing the improvement comprising:

- a) a processing unit, arranged in parallel with the path from the photodiode array to the input to the multiplexing unit, to process the plurality of data signals detected by the photodiode array,
- b) the processing unit, in parallel, processing the plurality of data signals to identify at least one data signal conforming to a predetermined criteria,
- c) the processing unit including a digital logic unit to generate and transmit, an identifying and selective processing signal in response to the identification of the at least one data signal conforming to the predetermined criteria, to the multiplexing unit for controlling the identification and selective processing of the at least one data signal conforming to the predetermined criteria from among the plurality of data input signals being input to the multiplexing unit on the path from the photodiode array to the exclusion of the remaining plurality of data signals not conforming to the predetermined criteria being input to the multiplexing unit on the path from the photodiode array, and
- d) the processing unit being coupled to the multiplexing unit via an output data bus to transmit the identifying and selective processing signal in response to the identification of the at least one data signal conforming to the predetermined

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criteria to the multiplexing unit for identification and selective processing of the at least one data signal conforming to the predetermined criteria,

e) whereupon the multiplexing unit selectively processes the identified at least one data signal conforming to the predetermined criteria from among the plurality of input data signals being input to the multiplexing unit on the path from the photodiode array to the exclusion of the remaining plurality of data signals not conforming to the predetermined criteria being input to the multiplexing unit from the photodiode array.

25. (new) An apparatus as claimed in Claim 24, wherein the processing unit includes a level detector arranged to determine whether each of the plurality of data signals is above a predetermined threshold.

26. (new) An apparatus as claimed in Claim 25, wherein the level detector is an array of comparators.

27. (new) An apparatus as claimed in Claim 24, wherein the processing unit includes a control bus for inputting an external control signal to the digital logic unit.

28. (new) An apparatus as claimed in Claim 25, wherein the processing unit includes a control bus for inputting an external control signal to the digital logic unit.

29. (new) An apparatus as claimed in Claim 26, wherein the processing unit includes a control bus for inputting an external control signal to the digital logic unit.

30. (new) An apparatus as claimed in Claim 27, wherein the external control signal is an instruction relating to the selective processing of the plurality of data signals.

31. (new) In a channel selection logic unit for a multiplexing unit wherein a radio frequency signal is input to a device that converts said radio frequency signal to a

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plurality of data signals correlated with the frequencies of the radio frequency signal, and that are detected by a photodiode array, the plurality of detected data signals are output from the photodiode array on a path that inputs the signals to the multiplexing unit for processing the improvement comprising:

- a) a processing unit is arranged in parallel with the path from the photodiode to the input to the multiplexing unit, to process the plurality of data signals detected by the photodiode array,
- b) the processing unit, in parallel, processing the plurality of data signals to identify at least one data signal conforming to a predetermined criteria,
- c) the processing unit including a digital logic unit to generate and transmit an identifying and selective processing signal in response to the identification of the at least one data signal conforming to the predetermined criteria to the multiplexing unit for identification and selective processing of the at least one data signal conforming to the predetermined criteria from among the plurality of data input signals being input to the multiplexing unit on the path from the photodiode array to the exclusion of the remaining plurality of data signals not conforming to the predetermined criteria being input to the multiplexing unit on the path from the photodiode array, and
- d) the processing unit being coupled to the multiplexing unit via an output data bus to transmit the identifying and selective processing signal in response to the identified at least one data signal conforming to the predetermined criteria to the multiplexing unit for identification and selective processing of the at least one data signal conforming to the predetermined criteria,
- e) whereupon the multiplexing unit selectively processes the identified at least one data signal conforming to the predetermined criteria from among the plurality of input data signals being input to the multiplexing unit on the path from the photodiode array to the exclusion of the remaining plurality of data signals not conforming to the predetermined criteria being input to the multiplexing unit on the path from the photodiode array.

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32. (new) In a method of filtering a radio frequency signal for a multiplexing unit wherein a radio frequency signal is input to a device that converts said radio frequency signal to a plurality of data signals correlated with the frequencies of the radio frequency signal, and that are detected by a photodiode array, the plurality of data signals detected by the photodiode array being output on a path to the input of the multiplexing unit for processing the improvement comprising the steps of:

- a) processing in parallel with the path from the photodiode output to the input to the multiplexing unit, the plurality of data signals detected by the photodiode array,
- b) the processing step, in parallel, constituting processing the plurality of data signals to identify at least one data signal conforming to a predetermined criteria,
- c) the processing step including generating via digital logic an identifying and selective processing signal corresponding to the identified at least one data signal conforming to a predetermined criteria,
- d) transmitting via a data link the identifying and selective processing signal corresponding to the identified at least one data signal conforming to the predetermined criteria to the multiplexing unit for identification and selective processing of the at least one data signal conforming to the predetermined criteria from among the plurality of data input signals being input to the multiplexing unit on the path from the photodiode array to the exclusion of the remaining plurality of data signals not conforming to the predetermined criteria being input on the path to the multiplexing unit from the photodiode array, and
- e) whereupon the multiplexing unit selectively processes the identified at least one data signal conforming to the predetermined criteria from among the plurality of input data signals being input on the path to the multiplexing unit from the photodiode array to the exclusion of the remaining plurality of data signals being input on the path to the multiplexing unit from the photodiode array.

33. (new) A method as claimed in Claim 32, further comprising identifying the at least one data signal conforming to the predetermined criteria from the plurality of data

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signals by determining whether each of the plurality of data signals is above a predetermined threshold.

34. (new) A method as claimed in Claim 32, further comprising controlling the digital logic by an external control signal.

35. (new) A method as claimed in Claim 34, further comprising the controlling step being effected as an instruction relating to the selective processing of the plurality of data signals.